DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: MIRROR LAKE	Lake Area (ha):	15.01
Town: WOODSTOCK	Maximum depth (m):	10.0
County: Grafton	Mean depth (m):	4.7
River Basin: Merrimack	Volume (m³):	707000
Latitude: 43°56'41" N	Relative depth:	2.3
Longitude: 71°41'38" W	Shore configuration:	1.02
Elevation (ft): 695	Areal water load (m/yr):	
Shore length (m): 1400	Flushing rate (yr^{-1}) :	1.10
Watershed area (ha): 124.3	P retention coeff.:	0.64
<pre>% watershed ponded: 0.0</pre>	Lake type: natural	w/dam

BIOLOGICAL:	4 February 1997	14 August 1996
DOM. PHYTOPLANKTON (% TOTAL) #1	SPARSE - NO DOMINANT	SYNURA 50%
#2		CHRYSOSPHAERELLA 37%
#3		DINOBRYON 13%
PHYTOPLANKTON ABUNDANCE (units/mL)		
CHLOROPHYLL-A (µg/L)		4.03
DOM. ZOOPLANKTON (% TOTAL) #1	CYCLOPOID COPEPOD 43%	KELLICOTTIA 29%
#2	BOSMINA 29%	KERATELLA 21%
#3	(ALL ZOOPLANKTON SPARSE)	
ROTIFERS/LITER	2	36
MICROCRUSTACEA/LITER	5	27
ZOOPLANKTON ABUNDANCE (#/L)	7	66
VASCULAR PLANT ABUNDANCE		Scat/Common
SECCHI DISK TRANSPARENCY (m)		6.9
BOTTOM DISSOLVED OXYGEN (mg/L)	8.2	1.7
BACTERIA (E. coli, #/100 ml) #1		6
#2		
#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 5.5 Hypolimnion volume (m^3) : 30000 Anoxic volume (m^3) : None

CHEMICAL: Lake: MIRROR LAKE Town: WOODSTOCK					
	4 Febru	4 February 1997 14 A		ugust 1996	
DEPTH (m)	3.0	6.0	2.0	5.5	8.5
pH (units)	6.0	6.0	7.0	6.9	6.2
A.N.C. (Alkalinity)	3.3	3.4	3.9	3.6	5.3
NITRATE NITROGEN	< 0.05	< 0.05	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.15	0.14	0.19	< 0.10	0.29
TOTAL PHOSPHORUS	0.003	0.010	0.004	0.007	0.012
CONDUCTIVITY (µmhos/cm)	32.8	33.3	31.4	32.1	37.0
APPARENT COLOR (cpu)	6	6	15	15	25
MAGNESIUM			0.46		
CALCIUM			2.1		
SODIUM			2.2		
POTASSIUM			< 0.40		
CHLORIDE	< 2	< 2	3		3
SULFATE	4	4	4		4
TN : TP	50	14	48		24
CALCITE SATURATION INDEX			3.4		

All results in mg/L unless indicated otherwise

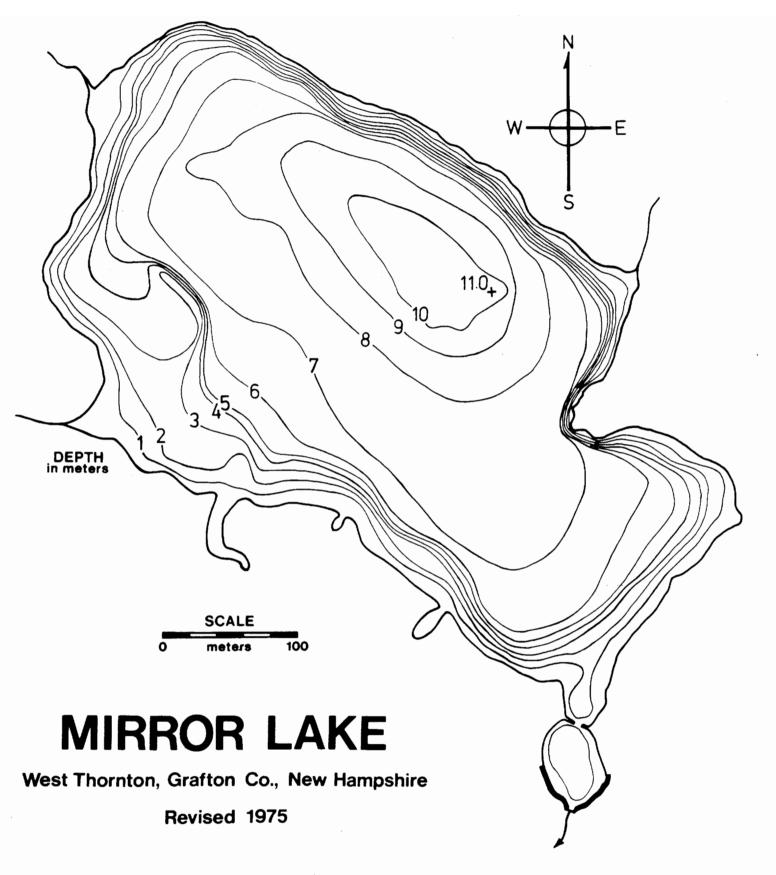
TROPHIC CLASSIFICATION: 1996

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
1	1	2	1	5	Oligo.

COMMENTS:

- Mirror Lake is located on the edge of the White Mountain National Forest.

 Several private residences were located on the western shore, a town beach was at the southern end near the outlet cove, and much of the north and eastern shoreline is part of the National Forest, acquired in 1987.
- 2. The lake is adjacent to the Hubbard Brook Experimental Station and various scientists connected with the station have conducted research on the lake. Professor Gene Likens wrote a history of the lake in the early 1970's in *Appalachia* and we have included a detailed bathymetric map from a 1988 Hubbard Brook publication list.
- 3. Motor boats are not allowed on Mirror Lake.
- 4. Mirror Lake is a clear water, nutrient-poor oligotrophic lake.



from: Publications of the Hubbard Brook

Ecosystem Study

FIELD DATA SHEET

LAKE: MIRROR LAKE

DATE: 08/14/96

TOWN: WOODSTOCK

WEATHER: SUNNY, WINDY, FEW CLOUDS, 80 F

211221 00, 21, 20			
DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.1	23.5	9.4	109 %
1.0	23.5	9.4	109 %
2.0	23.2	9.4	109 %
3.0	23.0	9.4	109 %
4.0	22.9	9.5	108 %
5.0	21.0	12.0	135 %
6.0	16.0	12.0	122 %
7.0	13.4	8.5	80 %
8.0	11.9	4.9	44 %
9.0	11.5	1.7	15 %
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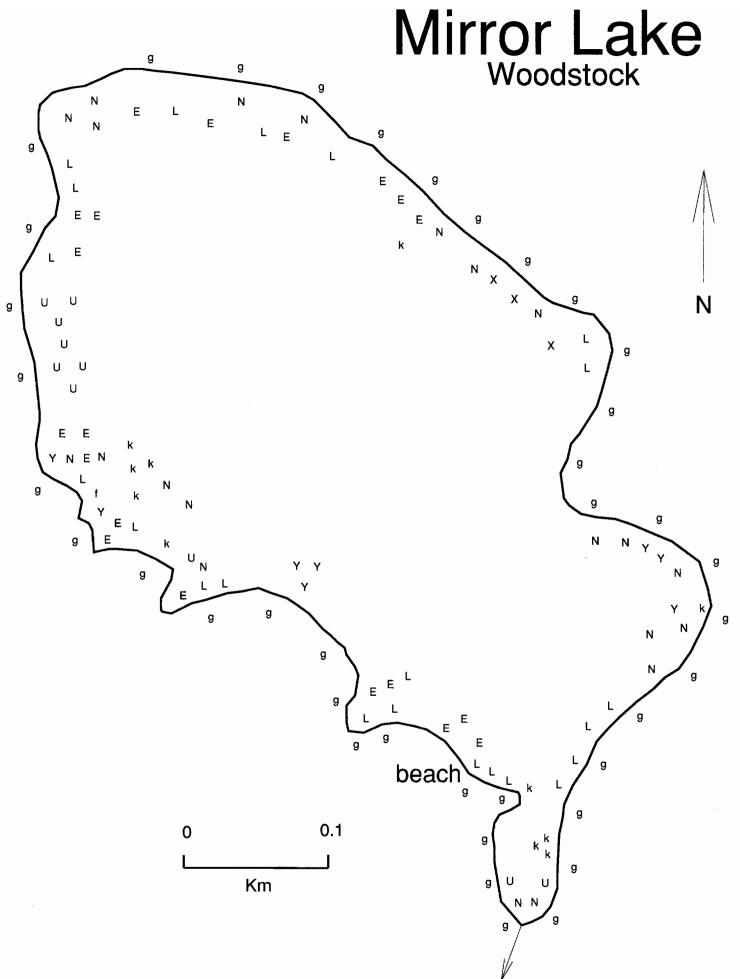
SECCHI DISK (m): 6.9

COMMENTS:

BOTTOM DEPTH (m): 9.6

TIME: 1230

*Dissolved oxygen values are in mg/L



AQUATIC PLANT SURVEY TOWN: WOODSTOCK LAKE: MIRROR LAKE DATE: 08/14/96

LAN	E: HIROR LAKE	TOWN: WOODSTOCK	DAIE: 00/14/90	
Key		NAME	ABIINDANCE	
ией	GENERIC	COMMON	ABUNDANCE	
L	Lobelia dortmanna	Water lobelia	Scat/Common	
N	Nymphaea	White water lily	Scattered	
Y	Nuphar	Yellow water lily	Scattered	
k	Nymphaea	Pink water lily	Sparse	
U	Utricularia	Bladderwort	Scattered	
f		Filamentous algae	Sparse	
Х		Sterile thread-like leaf	Sparse	
E	Eriocaulon septangulare	Pipewort	Scattered	
g	Myrica gale	Sweet gale	Common	
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OVERALL ABUNDANCE: Scat/Common

GENERAL OBSERVATIONS:

- Large green algal mats and freshwater sponges were observed. 1.
- 2. Sweet gale was present around most of the shoreline but generally out of the water.